IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Previously Presented): A device for measuring dynamic matrix sensitivity of an inertia sensor, comprising:

a motion generating machine for inducing a motion including at least one of a translational motion and a rotational motion, wherein a degree of freedom of the motion is N ($1 \leq N \leq 6$, and N is an integer);

a unit subject to calibration provisionally fixed on a table of the motion generating machine, constituted by at least one of an acceleration measuring unit, an angular velocity measuring unit and an angular acceleration measuring unit, wherein a degree of freedom of detection is M ($1 \leq M \leq 6$, and M is an integer);

output means for fetching an output from the unit subject to calibration;

one or more light reflectors;

a displacement measuring unit enabled to grasp a multidimensional motion by using a laser interferometer formed by irradiating the one or more light reflectors with laser beams from as many directions;

a processing unit for calculating an M×N dynamic sensitivity matrix $S_{p,q}(\omega)$ of the unit subject to calibration based on an output from the unit subject to calibration when the motion generating machine is vibrated by a vibration vector ($a_{i,x1}(j\omega t)$, $a_{i,x2}(j\omega t)$, …, $a_{i,xN}(j\omega t)$)) ($1 \leq i \leq N$, j is an imaginary unit, $\omega = 2\pi f$, and f is a frequency of vibration) and a data indicating a state of the multidimensional motion obtained from the displacement measuring unit; and

displaying means to display or a transmitting means to transmit an output of the processing unit and output of the unit subject to calibration.

Claim 2 (Original): A device according to claim 1, wherein the motion generating machine generates a periodical motion.

Claim 3 (Previously Presented): A device according to claim 1, wherein the motion generating machine generates a motion of pulse function nature.

Claim 4 (Original): A device according to claim 3, further comprising:

first converting means for finding a Fourier component on a frequency axis of the motion of the nature of pulse function;

second converting means for finding a Fourier component on a frequency axis of an output of the acceleration measuring unit, angular velocity measuring unit or angular acceleration measuring unit that is the unit subject to calibration; and

means for finding from respective outputs of the first and the second converting means a frequency characteristic of correction of the acceleration measuring unit, angular velocity measuring unit or angular acceleration measuring unit that is the unit subject to calibration and displaying or transmitting the frequency characteristics.

Claim 5 (Previously Presented): A device according to claim 1, wherein the motion generating machine is capable of producing a random motion.

Claim 6 (Currently Amended): A device according to claim [[3]] 5, further comprising:

first converting means for finding a Fourier component on a frequency axis of the random motion;

second converting means for finding a Fourier component on a frequency axis of an output of the acceleration measuring unit, angular velocity measuring unit or angular acceleration measuring unit that is the unit subject to calibration; and

means for finding from respective outputs of the first and the second converting means a frequency characteristics of calibration of the acceleration measuring unit, angular velocity measuring unit or angular acceleration measuring unit that is the unit subject to calibration and displaying or transmitting the frequency characteristics.

Claim 7 (Previously Presented): A device according to claim 1, wherein the motion generating machine is provided with an accelerometer for controlling vibration motion and a feedback circuit for controlling a drive unit for enabling a signal from the sensor thereof to assume a value determined in advance.

Claim 8 (Currently Amended): A device according to claim [[5]] 7, wherein the accelerometer is provided with dynamic matrix sensitivity, and feedback control thereof estimates an input vector from an output vector of the accelerometer by using the dynamic matrix sensitivity.

Claim 9 (Previously Presented): A device according to claim 8, further comprising:

means for finding an error from respective outputs of the data processing unit and the acceleration measuring unit, angular velocity measuring unit or angular acceleration measuring unit that is the unit subject to calibration and displaying the error or means; or

means for finding the error and transferring a value of the error.

Claim 10 (Canceled)

Claim 11 (Previously Presented): A device according to claim 1, further comprising:

direction means for rendering an angle of disposition of the acceleration measuring unit, angular velocity measuring unit or angular acceleration measuring unit that is the unit subject to calibration variable relative to a gravitational direction; and

means for obtaining an output from the unit subject to calibration and temporarily fixed in a plurality of directions relative to the gravitational direction, finding dynamic matrix sensitivities with respect to the plurality of directions and estimating dynamic matrix sensitivity deprived of an influence of gravitational force from the plurality of dynamic matrix sensitivities.

Claim 12 (Previously Presented): A device according to claim 1, wherein the unit subject to calibration is an acceleration measuring unit, angular velocity measuring unit or angular acceleration measuring unit possessing an output only in a one-axis direction, and the motion generating machine for inducing a translational motion or rotational motion is a motion generating machine enabled to move with a plurality of degrees of freedom.

Claim 13 (Previously Presented): A device according to claim 1, wherein the device for measuring the dynamic matrix sensitivity of an inertia sensor is wholly installed in a room capable of intercepting sound or vibration from outside the room, the acceleration measuring unit that is the unit subject to calibration is a seismometer, and the motion generating machine generates a motion of pulse or cyclic function nature and imparts fine vibration in an vibration frequency band and a seismic zone detectable by the seismometer.

Claim 14 (Previously Presented): A device according to claim 1, wherein the motion generating machine is a motion generating machine generating a random motion and imparts vibration in a vibration frequency band detectable by an inertia sensor used for constantly detecting fine vibration of a vibro-isolating common table, and the motion generating machine or the table is provided with cooling means or a thermostatic unit.

Claim 15 (Previously Presented): A device according to claim 1, wherein the motion generating machine is a motion generating machine which imparts vibration in a vibration frequency band detectable by an accelerometer used for controlling an automobile suspension or an accelerometer used for controlling an automobile passenger protecting airbag, the acceleration measuring unit that is the unit subject to calibration is an accelerometer used for controlling an automobile suspension or an accelerometer used for controlling an automobile passenger protecting airbag, and the acceleration measuring unit that is the unit subject to calibration is provided with a temperature controlling unit for controlling an temperature environment of the acceleration measuring unit.

Claim 16 (Previously Presented): A device according to claim 1, wherein the motion generating machine is a motion generating machine which simultaneously generates a motion of pulse or cyclic function nature and a motion comprising a translational motion and a rotational motion and emits vibration in a vibration frequency band detectable by an inertia sensor used for controlling a motion of a robot, the acceleration detecting unit that is the unit subject to calibration is an inertia sensor used for controlling a motion of a robot, and the acceleration measuring unit that is the unit subject to calibration is provided with a temperature controlling unit for controlling a temperature environment of the acceleration measuring unit.

Claim 17 (Previously Presented): A device according to claim 1, wherein the motion generating machine is a motion generating machine which imparts vibration in a vibration frequency band detectable by an inertia sensor used for measuring a motion of a human body, vibration imparted to a human body or an animal behavior monitor, and the acceleration measuring unit that is the unit subject to calibration is a distributed accelerometer serving as an inertia sensor used for measuring a motion of a human body, a vibration imparted to a human body or an animal behavior monitor and is provided with multi-channel signal output terminals for emitting a signal of the distributed accelerometers.

Claim 18 (Canceled)

Claim 19 (Previously Presented): A method for measuring dynamic matrix sensitivity of an inertia sensor, comprising the steps of:

forming in the device set forth in claim 1 a setup wherein an output vector having an output value of N axes as a component is expressed by a product of the dynamic matrix sensitivity multiplied by an input vector having states of motion of the motion generating machine as components on the assumption that the displacement measuring means produces outputs in different N axes, and that the numbers M and N do not satisfy M x N = 1; and

dividing the M degrees of freedom into a plurality of groups allowing duplication,

1) finding by measurement the output vector for the input vector with respect to each of the groups,

2) converting and unifying the output vectors enabled to correspond to the input vectors having M degrees of freedom, and subsequently

3) finding dynamic matrix sensitivity from the correspondence of the output vectors to the unified input vectors.

Claim 20 (Previously Presented): A device according to claim 1, further comprising means for multiplying a filter matrix corresponding to a inverse matrix of the matrix sensitivity by a vector comprising an output from the accelerometer to enable measurement precision of the accelerometer to be enhanced.